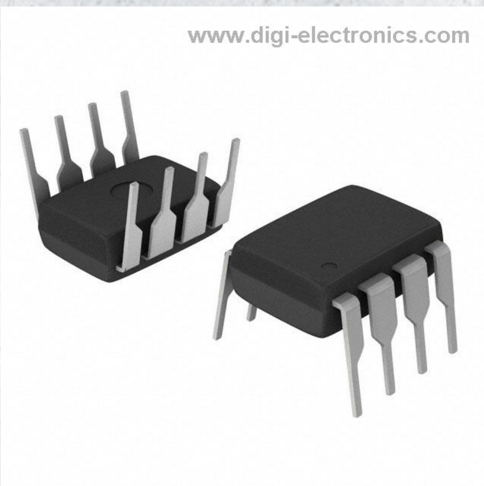
PC824 Datasheet



DiGi Electronics Part Number	PC824-DG
Manufacturer	Sharp Microelectronics
Manufacturer Product Number	PC824
Description	OPTOISOLATOR 5KV 2CH TRANS 8DIP
Detailed Description	Optoisolator Transistor Output 5000Vrms 2 Channel 8-DIP

https://www.DiGi-Electronics.com

This model PC824 is available at DiGi Electronics.

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Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
PC824	Sharp Microelectronics
Series:	Product Status:
-	Obsolete
Number of Channels:	Voltage - Isolation:
2	5000Vrms
Current Transfer Ratio (Min):	Current Transfer Ratio (Max):
20% @ 1mA	300% @ 1mA
Turn On / Turn Off Time (Typ):	Rise / Fall Time (Typ):
-	4µs, 3µs
Input Type:	Output Type:
AC, DC	Transistor
Voltage - Output (Max):	Current - Output / Channel:
35V	50mA
Voltage - Forward (Vf) (Typ):	Current - DC Forward (If) (Max):
1.2V	50 mA
Vce Saturation (Max):	Operating Temperature:
200mV	-30°C ~ 100°C
Mounting Type:	Package / Case:
Through Hole	8-DIP (0.300", 7.62mm)
Supplier Device Package:	
8-DIP	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
RoHS non-compliant	1 (Unlimited)
ECCN:	HTSUS:
EAR99	8541.49.8000

PC824/PC844

AC Input Photocoupler

❋ Lead forming type (I type) and taping reel type (P type) are also available.

■ Features

1. AC input
2. High isolation voltage between input and output ($V_{iso\,(rms)}$:5kV)
3. Compact dual-in-line package
   PC824 (2-channel type)
   PC844 (4-channel type)
4. Current transfer ratio
   CTR:MIN. 20% at I_F=±1mA, V_{CE}=5V
5. Recognized by UL, file No. E64380

■ Applications

1. Programmable controllers
2. Telephones
3. Facsimiles

■ Absolute Maximum Ratings

(T_a=25˚C)

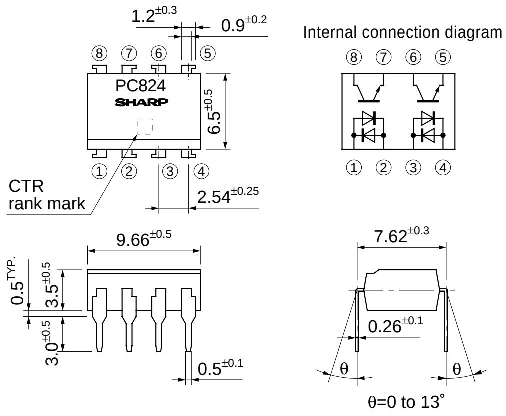
Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	±50	mA
Input	*1 Peak forward current	I_{FM}	±1	A
Input	Power dissipation	P	70	mW
Output	Collector-emitter voltage	V_{CEO}	35	V
Output	Emitter-collector voltage	V_{ECO}	6	V
Output	Collector current	I_C	50	mA
Output	Collector power dissipation	P_C	150	mW
Total power dissipation		P_{tot}	200	mW
*2 Isolation voltage		$V_{iso\,(rms)}$	5	kV
Operating temperature		T_{opr}	−30 to +100	˚C
Storage temperature		T_{stg}	−55 to +125	˚C
*3 Soldering temperature		T_{sol}	260	˚C

*1 Pulse width≤100µs, Duty ratio:0.001
*2 40 to 60%RH, AC for 1 minute
*3 For 10s

■ Outline Dimensions

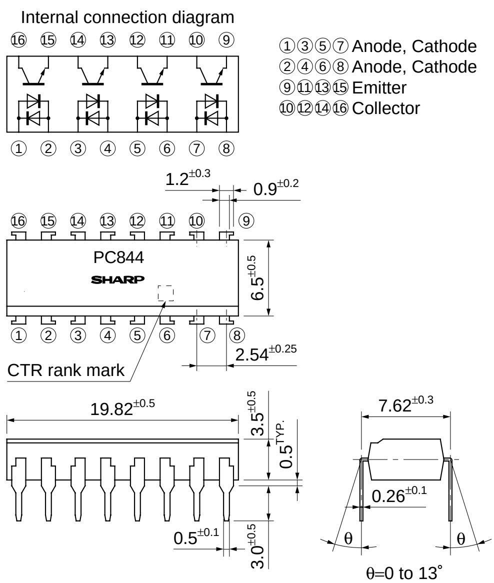
(Unit : mm)

PC824



①③ Anode, Cathode ⑤⑦ Emitter
②④ Anode, Cathode ⑥⑧ Collector

PC844



■ Electro-optical Characteristics

(T_a=25˚C)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage		V_F	I_F=±20mA	–	1.2	1.4	V
	Peak forward voltage		V_{FM}	I_{FM}=±0.5V	–	–	3.0	V
	Terminal capacitance		C_t	V=0, f=1kHz	–	50	250	pF
Output	Collector dark current		I_{CEO}	V_{CE}=20V, I_F=0	–	–	100	nA
Transfer charac-teristics	Collector current		I_C	I_F=±1mA, V_{CE}=5V	0.2	–	3.0	mA
	Collector-emitter saturation voltage		$V_{CE\,(sat)}$	I_F=±20mA, I_C=1mA	–	0.1	0.2	V
	Isolation resistance		R_{ISO}	DC500V, 40 to 60%RH	5×10^{10}	10^{11}	–	Ω
	Floating capacitance		C_f	V=0, f=1MHz	–	0.6	1.0	pF
	Cut-off frequency		f_c	V_{CE}=5V, I_C=2mA, R_L=100Ω, –3dB	15	80	–	kHz
	Response time	Rise time	t_r	V_{CE}=2V, I_C=2mA, R_L=100Ω	–	4	18	μs
		Fall time	t_f		–	3	18	μs

■ Rank Table

(I_F=±1mA, V_{CE}=5V, T_a=25˚C)

Model No.	Rank mark	I_C (mA)
PC824A	A	0.5 to 1.5
PC844A		
PC824	A or no mark	0.2 to 3.0
PC844		

Fig.1 Forward Current vs. Ambient Temperature

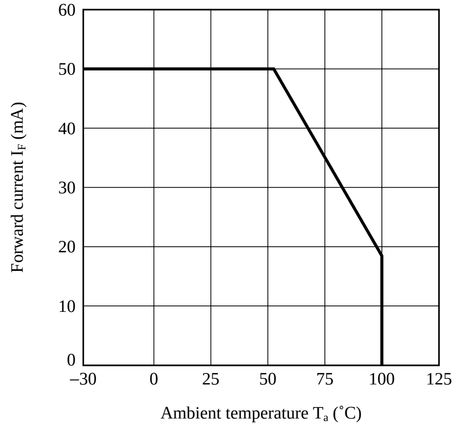


Fig.2 Collector Power Dissipation vs. Ambient Temperature

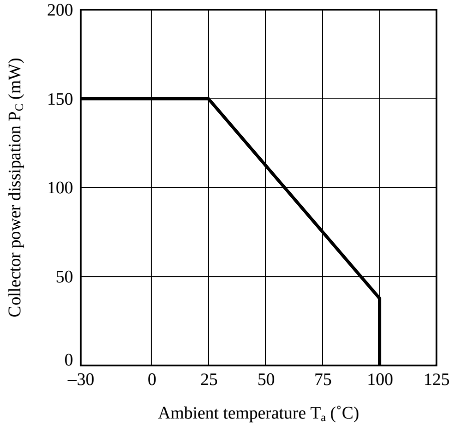


Fig.3 Peak Forward Current vs. Duty Ratio

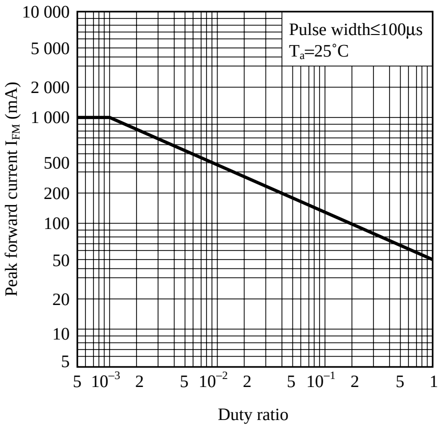


Fig.4 Forward Current vs. Forward Voltage

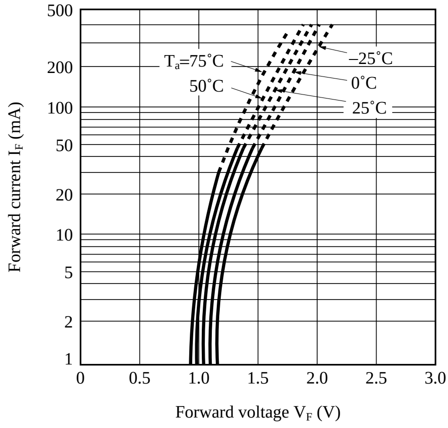


Fig.5 Current Transfer Ratio vs. Forward Current

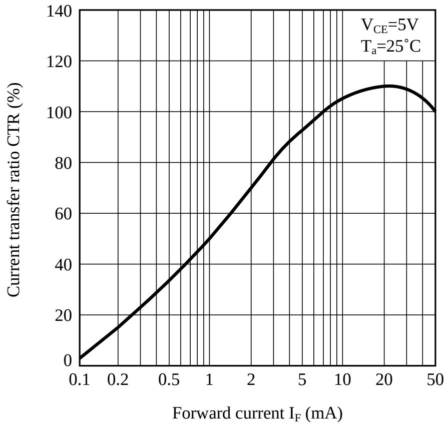


Fig.6 Collector Current vs. Collector-emitter Voltage

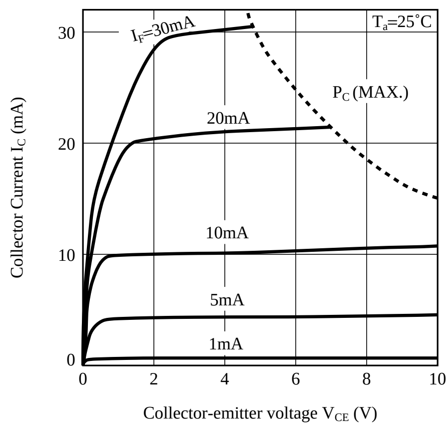


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

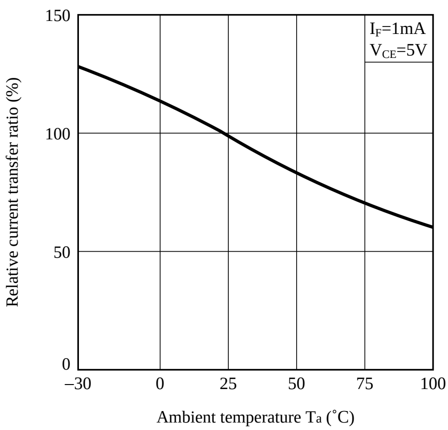


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

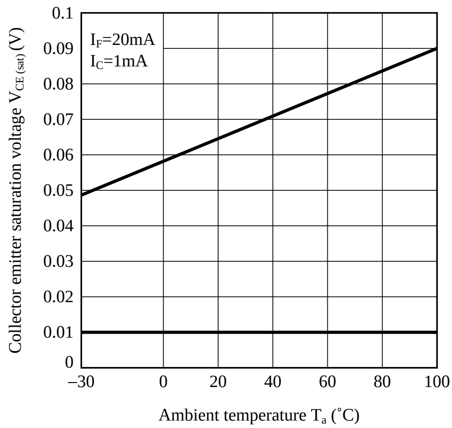


Fig.9 Collector Dark Current vs. Ambient Temperature

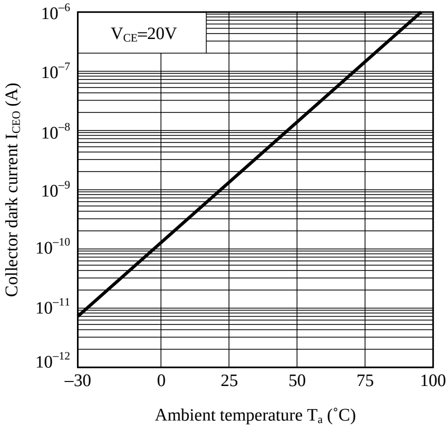


Fig.10 Collector-emitter Saturation Voltage vs. Forward Current

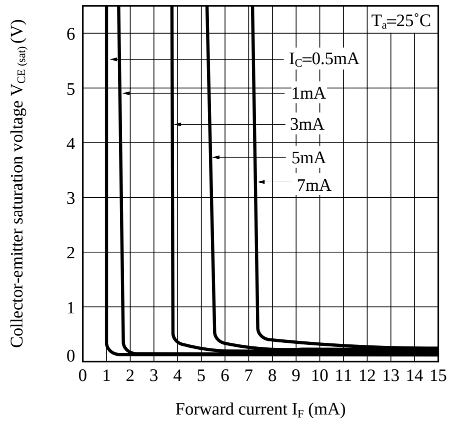
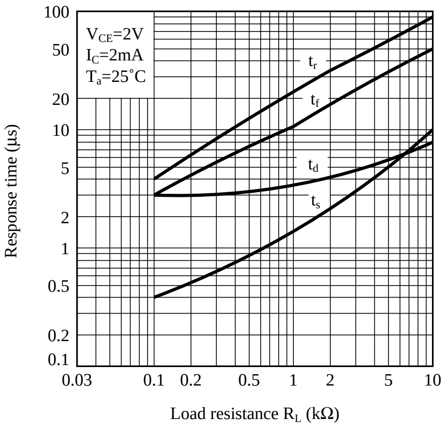


Fig.11 Response Time vs. Load Resistance



Test Circuit for Response Time

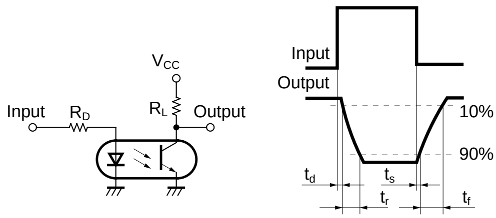
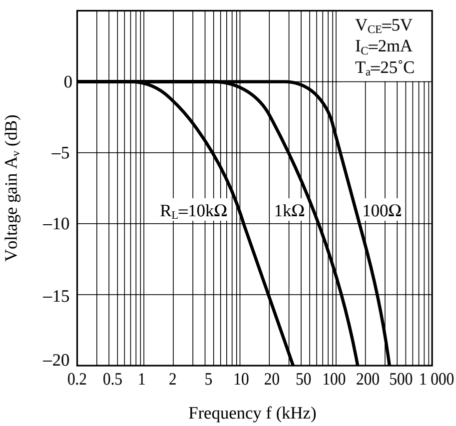
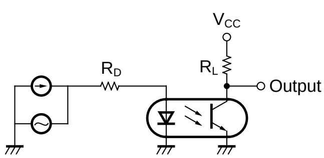


Fig.12 Frequency Response



Test Circuit for Frequency Response



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  --- Industrial control
  --- Audio visual equipment
  --- Consumer electronics

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  --- Gas leakage sensor breakers
  --- Alarm equipment
  --- Various safety devices, etc.

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